

## CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1    1. (Previously presented) A method for providing film grain information comprising  
2    the steps of:

3                 characterizing an input image information stream in accordance with an input  
4    image stream and a filtered input image stream to provide information indicative of film  
5    grain within the image stream, the film grain information including at least one parameter  
6    among a set of possible parameters specifying different attributes of the film grain in the  
7    image stream;

8                 encoding the film grain information for subsequent transmission.

1                 2. (Previously presented) A method for providing film grain information  
2    comprising the steps of:

3                 characterizing an image information stream to provide information indicative of  
4    film grain within the image stream, the film grain information including at least one  
5    parameter among a set of possible parameters specifying different attributes of the film  
6    grain in the image stream; and

7                 encoding the film grain information for subsequent transmission;

8                 wherein the set of parameters includes a plurality of correlation parameters and a  
9    plurality of intensity-independent parameters.

1                 3. (Original) The method according to claim 2 wherein at least one correlation  
2    parameter defines a spatial correlation in a perceived pattern of film grain.

1                 4. (Original) The method according to claim 2 wherein at least one correlation  
2    parameter defines a correlation between color layers.

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1        5. (Original) The method according to claim 2 wherein at least one correlation  
2 parameter defines a temporal correlation resulting from previous processing the image  
3 sequence.

1        6. (Original) The method according to claim 2 wherein at least one intensity-  
2 independent parameters defines an aspect ratio of the film grain.

1        7. (Original) The method according to claim 1 wherein at least one parameter  
2 defines intensity of a random component of the film grain.

1        8. (Original) The method according to claim 2 wherein at least one of the  
2 intensity-independent parameters defines a color space and blending mode operation used  
3 to merge the simulated film grain with the image.

1        9. (Original) The method according to claim 1 further comprising the step of  
2 transmitting the film grain information transmitted out-of band with respected to  
3 transmission of image representative information.

1        10. (Original) The method according to claim 1 further comprising the step of  
2 transmitting the film grain information transmitted in band with respected to transmission  
3 of image representative information.

1        11. (Original) The method in accordance with claim 2 where the set of  
2 parameters are computed in accordance with a second order auto regression  
3 representation of the spatial correlation and a first order regression representation of the  
4 cross-color and temporal correlations.

1        12. (Original) The method according to claim 3 wherein the at least one  
2 parameter describing the spatial correlation of the grain is established in accordance with  
3 a spatial convolution model.

1           13. (Original) The method according to claim 3 wherein the at least one  
2 parameter describing the spatial correlation of the grain is obtained from cut frequencies  
3 of a filter in the Fourier domain.

1           14 (Original) The method according to claim 1 wherein the encoding step  
2 comprises encoding the film grain information according to the ITU-T H.264 video  
3 coding standard.

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1           15. (Previously pending)     Apparatus for providing film grain, comprising:  
2           first means for characterizing an input image information stream in accordance  
3 with an input image stream and a filtered input image stream to provide information of  
4 film grain within the image stream, the information including at least one parameter  
5 among a set of possible parameters specifying different attributes of the film grain in the  
6 image stream;

7           second means encoding the film grain information for subsequent transmission.

1           16. (Previously presented)     Apparatus for providing film grain, comprising:  
2           first means for characterizing an image information stream to provide information  
3 of film grain within the image stream, the information including at least one parameter  
4 among a set of possible parameters specifying different attributes of the film grain in the  
5 image stream;

6           second means encoding the film grain information for subsequent transmission;

7     and

8           wherein the set of parameters includes a plurality of correlation parameters and a  
9 plurality of intensity-independent parameters.

1           17. (Original) The apparatus according to claim 16 wherein at least one  
2 correlation parameter defines a spatial correlation in a perceived pattern of film grain.

1           18. (Original) The apparatus according to claim 16 wherein at least one  
2 correlation parameter defines a correlation between color layers.

1            19. (Original) The apparatus according to claim 16 wherein at least one  
2 correlation parameter defines a temporal correlation resulting from previous processing  
3 the image sequence.

1            20. (Original) The apparatus according to claim 16 wherein at least one intensity-  
2 independent parameters defines an aspect ratio of the film grain.

1            21. (Original) The apparatus according to claim 15 wherein at least one parameter  
2 defines intensity of a random component of the film grain.

1            22. (Original) The apparatus according to claim 16 wherein at least one of the  
2 intensity-independent parameters defines a color space and blending mode operation used  
3 to merge the simulated film grain with the image.

1            23. (Original) The apparatus in accordance with claim 16 wherein the first mean  
2 computes the set of parameters in accordance with a second order auto regression  
3 representation of the spatial correlation and a first order regression representation of the  
4 cross-color and temporal correlations.

1            24. (Original) The apparatus according to claim 17 wherein the at least one  
2 parameter describing the spatial correlation of the grain is established in accordance with  
3 a spatial convolution model.

1            25. (Previously presented) The apparatus according to claim 17 wherein the at  
2 least one parameter describing the spatial correlation of the grain is obtained from cut  
3 frequencies of a filter in the Fourier domain.

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1            26. (Original) The apparatus according to claim 15 wherein second means  
2 encodes the film grain information according to the ITU-T H.264 video coding standard.

1           27. (Previously presented)   A method for providing film grain information  
2 comprising the steps of:  
3                 characterizing an image information stream to provide information indicative of  
4                 film grain within the image stream, the film grain information identifying a model  
5                 specifying how to simulate film grain and at least one parameter among a set of possible  
6                 parameters in the film grain information specifying different attributes of the film grain in  
7                 the image stream for use with said model; and  
8                 encoding the film grain information separately from encoding the image  
9                 information for subsequent transmission together to enable simulation of film grain in the  
10               image stream upon decoding using the film grain information upon decoding.

1           28. (Previously presented)   Apparatus for providing film grain, comprising:  
2                 first means for characterizing an image information stream prior to encoding to  
3                 provide information of film grain within the image stream, the information identifying a  
4                 model specifying how to simulate film grain and at least one parameter among a set of  
5                 possible parameters in the film grain information specifying different attributes of the  
6                 film grain in the image stream, for use with said identified model, and  
7                 second means encoding the film grain information separately from encoding the  
8                 image information for subsequent transmission together to enable simulation of film grain  
9                 in the image stream upon decoding using the film grain information upon decoding.